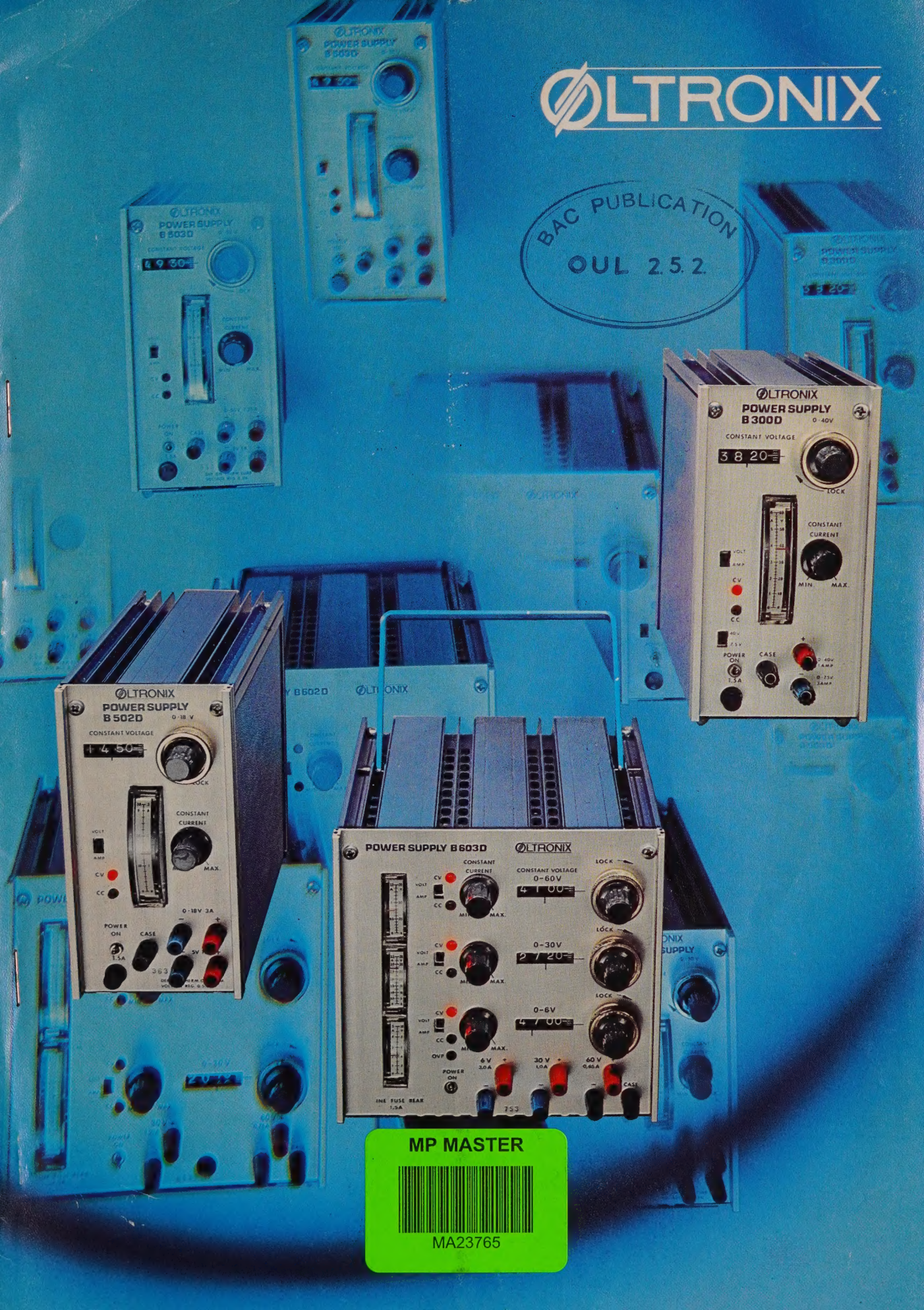
ØLTRONIX

BAC PUBLICATION
OUL 2.5.2.



MP MASTER
MA23765

LABPAC

The Oltronix series of table-top power supplies comprises nine models, each having one or more separate output voltages. The voltage ranges of these models extend to a maximum of 500 V and the current range to 10 A. The compact design ensures considerable power capacity from a small volume. This is entirely due to the incorporation in the cases of our well-known cooling extrusions. Perforations in these extrusions result in an effective cooling air stream through the power supplies. Voltage adjustment and digital representation is achieved by means of a 10-turn potentiometer geared to counter wheels.

The potentiometer accuracy is nominally 0.25%. Should our readout accuracy be listed as 0.3% of maximum voltage for example, it must be understood that far superior results may be achieved by means of special calibration. It can thus be expected that the resolution and accuracy of the digital readout will be increased tenfold.

The design and assembly of our power supplies takes into account both existing and expected international safety regulations.

Detailed information of voltage and current characteristics may be found on page 4.

B601D

This unit has been specially designed for applications such as large systems of integrated circuits or electro-plating, in which currents of up to 10 A are required at low voltages.

The nominal voltage range is 0 – 6 V but as the design includes a filter choke, it may be considerably extended. At a lower current 10 V may be obtained provided the line voltage is maintained at 100%.

Two terminals located on the front panel facilitate remote sensing regulation. The built-in over voltage protection (OVP) limits the output voltage to 7 V. The OVP may be disconnected, its function being indicated by a LED.

B602D

This model is a dual supply providing 0 – 30 V at 1.4 A and 0 – 60 V at 0.7 A.

B603D

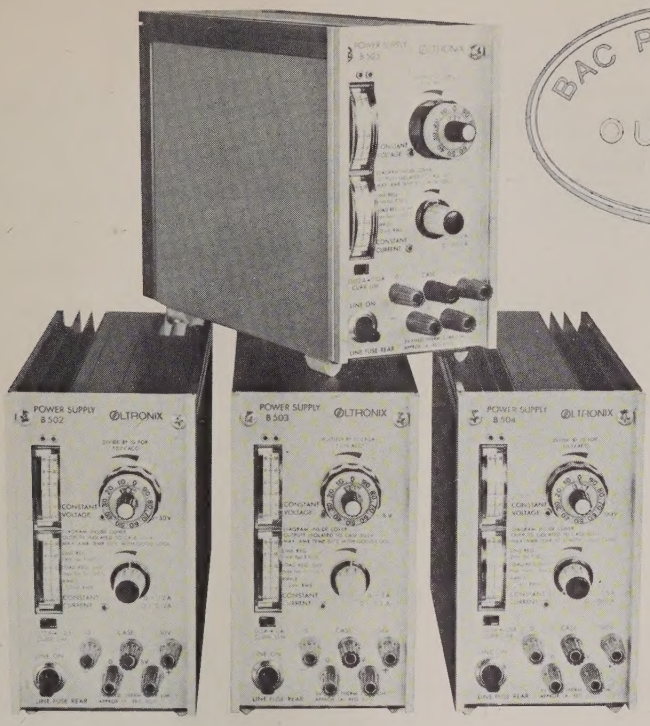
This is a triple model designed especially for logic circuits. In addition to the two ranges of the B602D, it has a third range of 0 – 6 V at 3 A. The latter range has an OVP which limits the voltage to 7 V.

B502D, B503D, B504D

These three units each provide two separate and completey isolated voltage ranges, one of which is fixed at 5 V at 1 A. The adjustable ranges of B502D, B503D and B504D are 0 – 18 V, 0 – 45 V and 0 – 100 V respectively.

LABPAC B500 SERIES

BAC PUBLICATION
OUL 252



The series contains four different units, namely LABPAC B502, B503, B504 and B505.

All these units provide one variable voltage (see table) and one fixed voltage of 5 volts at 1 Amp. Optionally 12 or 24 volts may be installed instead of 5 volts. Both are IC-regulated and completely insulated from each other.

The units may be operated either in the constant voltage mode or in the constant current mode. Mode of operation is indicated by operational amplifier driven light-emitting diodes.

The constant voltage accuracy of the 10-turn dial is around ± 0.2 % making the B500-series useable as a simple reference source. Voltage and current are indicated by separate meters.

Another operational amplifier drives an automatic range-switch for the voltmeter so that when a certain voltage limit is exceeded a higher range is obtained.

In addition to saving time and efficiency, the meter is thus protected from overload. Range indication is also made by light-emitting diodes.

The Labpac B500-series is protected by an overtemperature cut-out switch potted in the transformer to provide protection in situations where the current limit control does not guard against too high temperature. This switch resets itself when normal temperature is restored.

The constant current control has two ranges (see table). This control is ganged with the meter range switch providing overload protection as well as an excellent resolution.

The 5 V – 1 A fixed voltage has a chip temperature controlled current limit for protection. It is not metered.

ØLTRONIX

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OLTRONIX NEDERLAND N V, Euroweg 15, LEEK (Gr), Holland. Tel: 05945/2700 or 2784. Telex: 53301

TECHNICAL SPECIFICATION

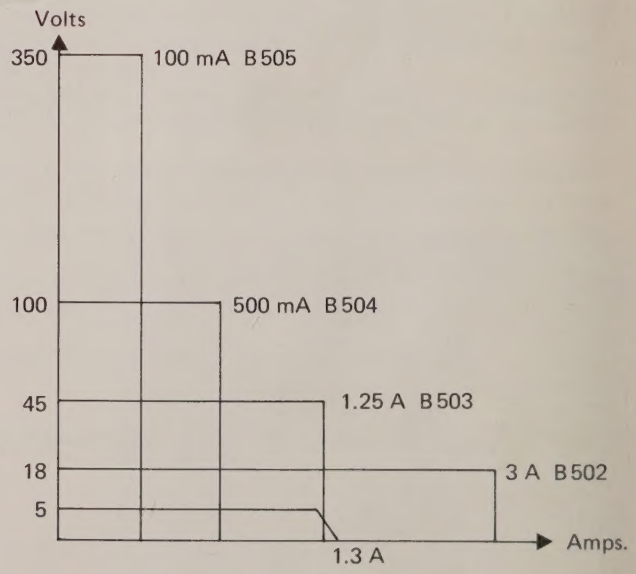
Data	B502	B503	B504	B505
Variable output voltage	18 V	45 V	100 V	350 V
Output current, two ranges	3 A/300 mA	1.25 A/125 mA	500 mA/50 mA	100 mA/10 mA
Accuracy	3°/oo	3°/oo	3°/oo	3°/oo
Ripple RMS	0.5 mV	0.5 mV	1 mV	5 mV
Line regulation	1 mV or 0.01 %	2 mV or 0.01 %	5 mV or 0.01 %	10 mV or 0.01 %
Load regulation	0.03 %	0.02 %	0.02 %	0.02 %
* Fixed output voltage	5 V	5 V	5 V	5 V
Current	1 A	1 A	1 A	1 A
Accuracy	± 0.2 V	± 0.2 V	± 0.2 V	± 0.2 V
Line regulation	0.2 %	0.2 %	0.2 %	0.2 %
Load regulation	100 mV	100 mV	100 mV	100 mV
Ripple (mV) RMS	2 mV	2 mV	2 mV	2 mV

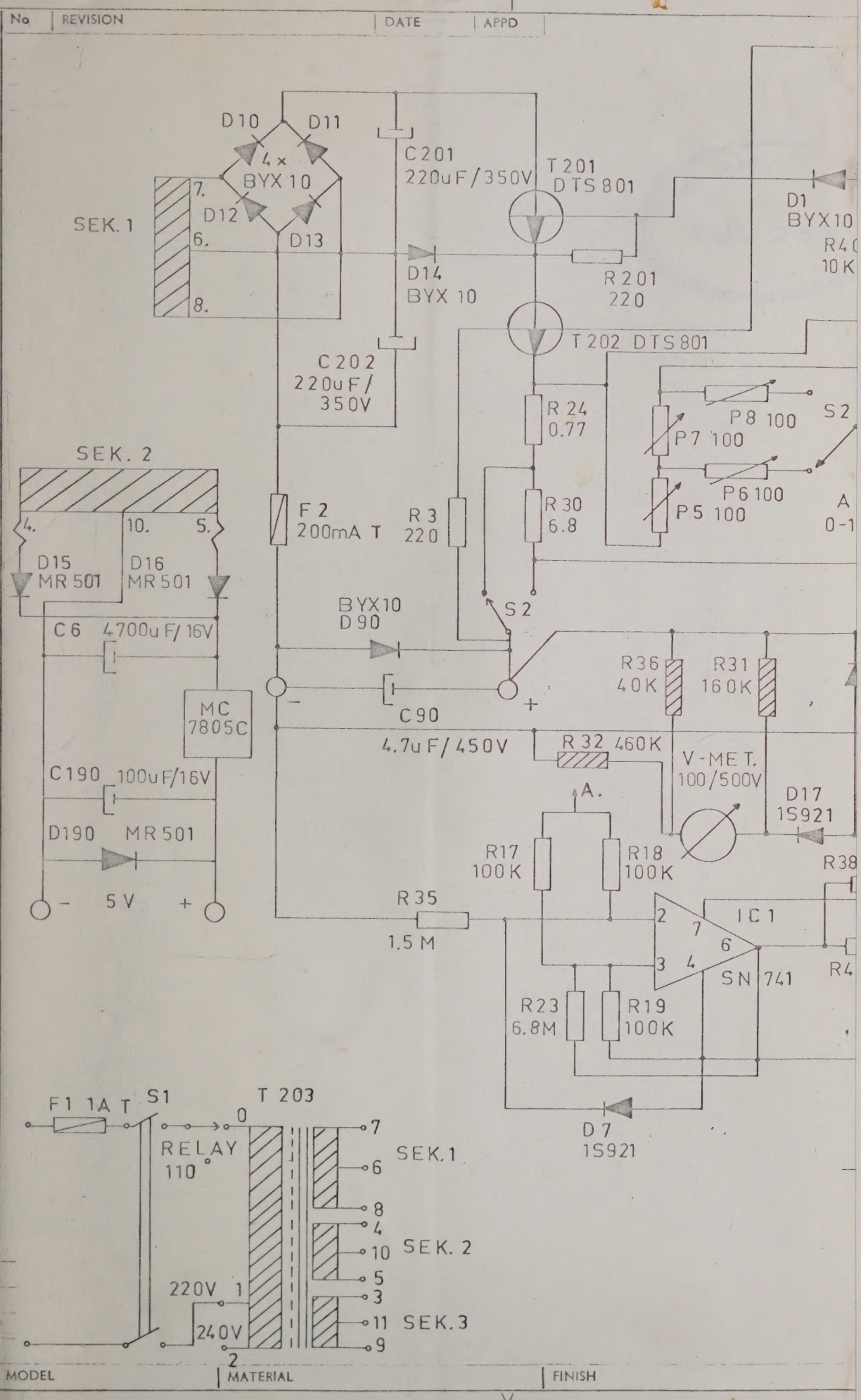
* As an option you may select between 12 and 24 V 5 W

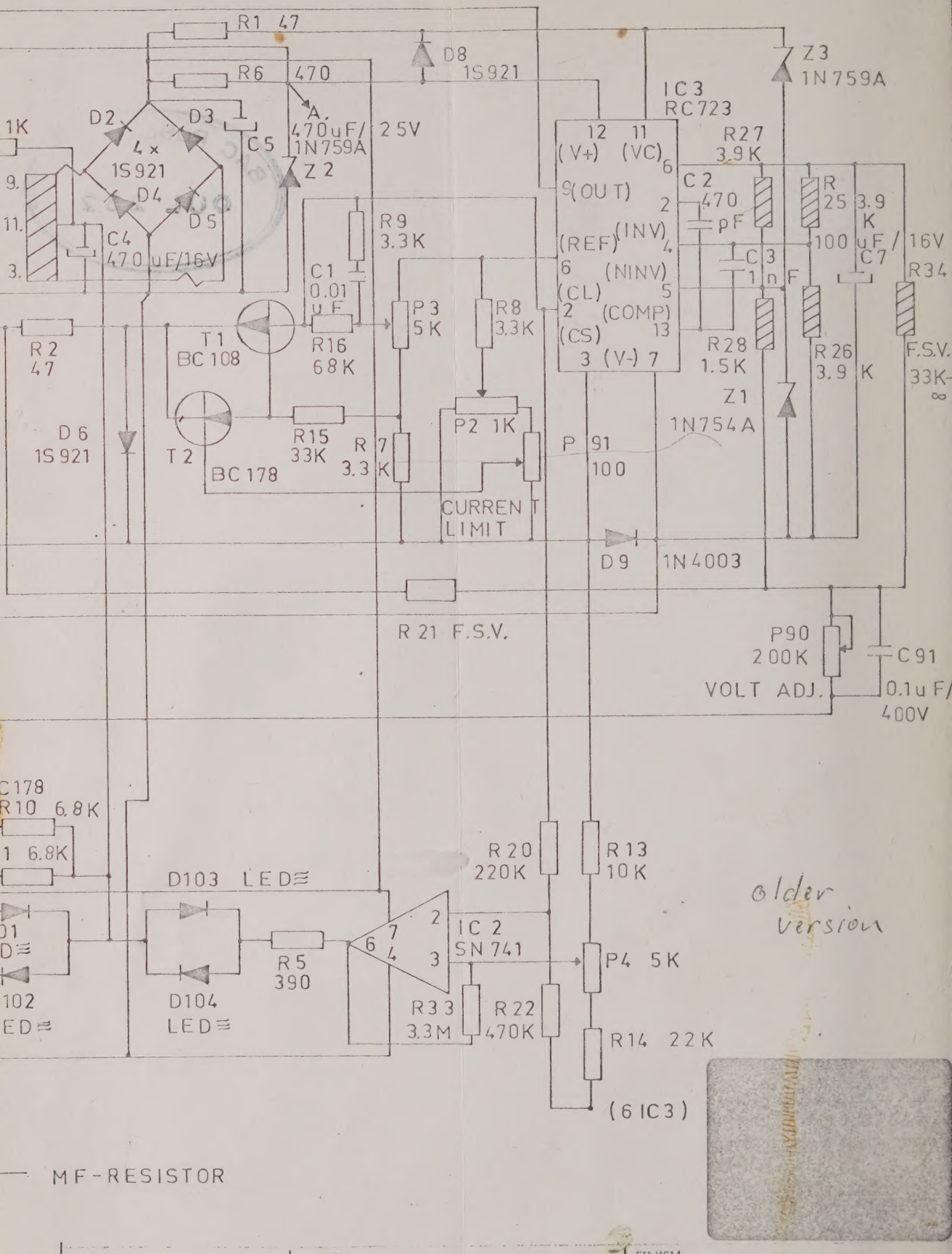
Input: 110, 117 and 220 V ± 10 % 50 – 60 Hz
240 V + 8 % – 12 % (max output voltage slightly reduced when operating at less than nominal line voltage)

Input power typical: 85 W
Temperature coefficient: < ± 100 ppm/°C
Storage temperature: -30° to +85°C
Working temperature range: (ventilation unobstructed) 0 – 35°C full load
Outputs totally floating: positive or negative may be grounded
Recovery time: 50 μs
Dimensions: 155 x 88 x 212 mm
Weight: 2.9 kg

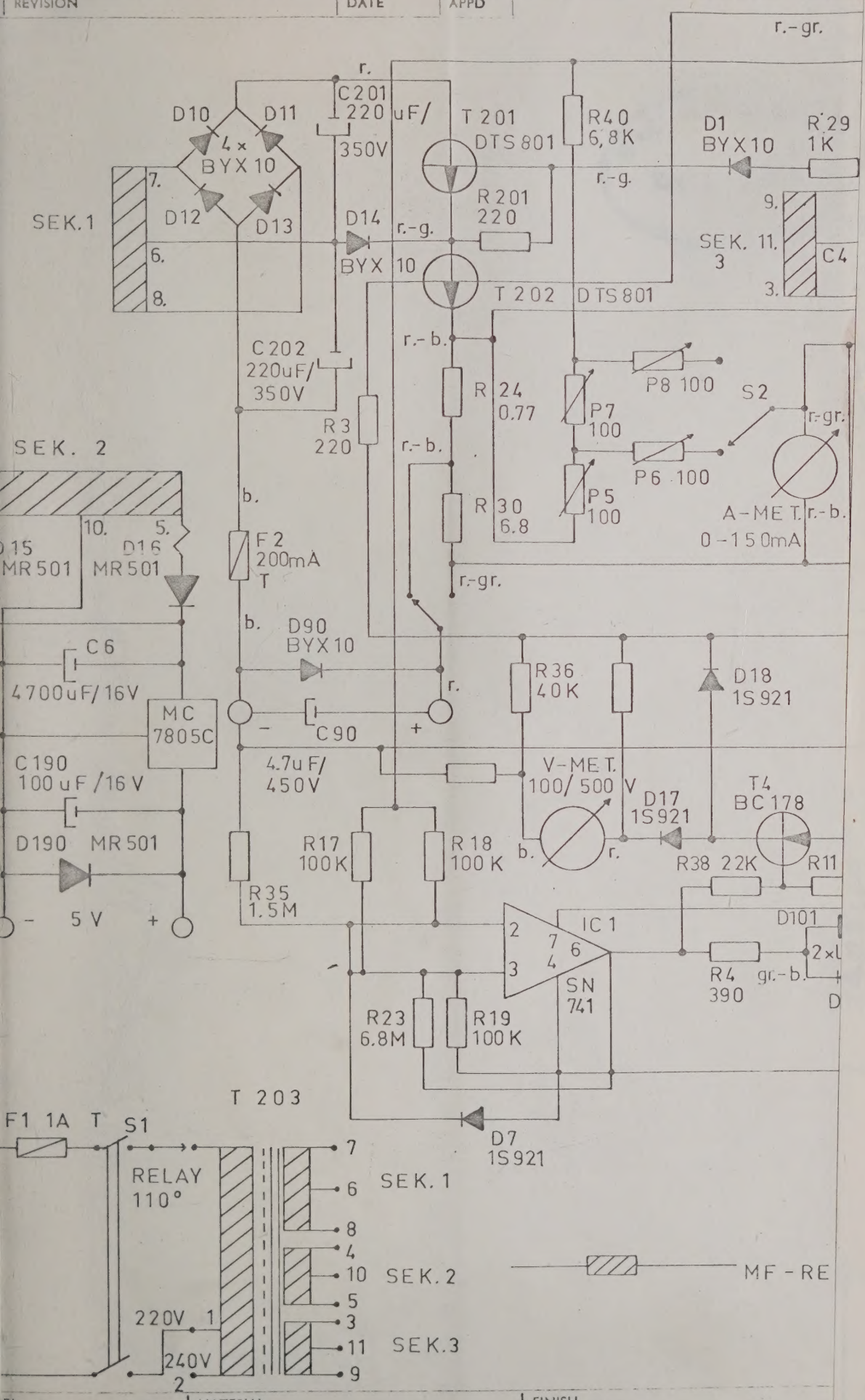
This specification is tentative and can be changed without notice.

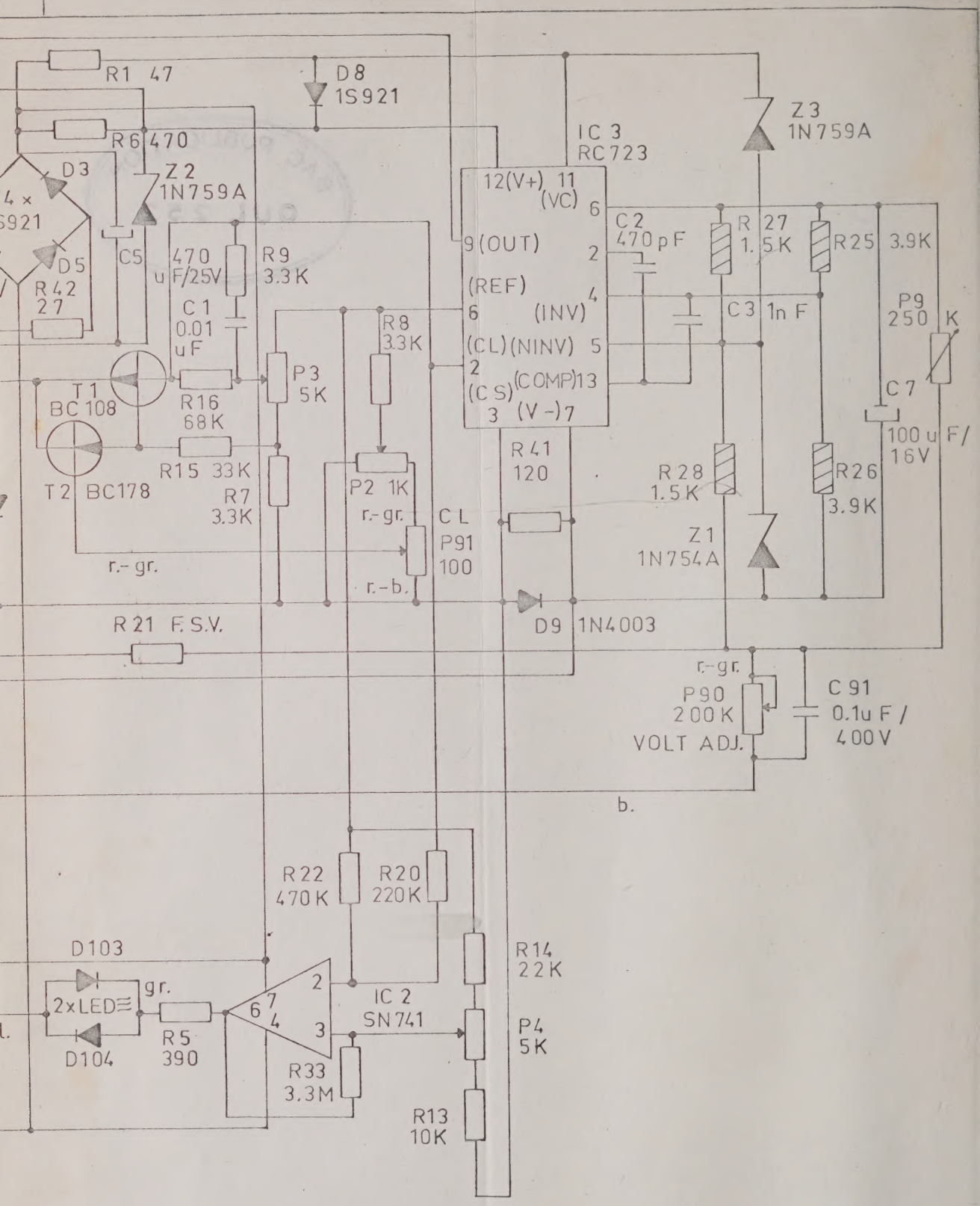



D10
D11
4 x
BYX 10
D12
D13
SEK. 1
7.
6.
8.
C201
220uF/350V
T201
DTS 801
D1
BYX10
R40
10K
D14
BYX 10
R201
220
T202 DTS 801
C202
220uF/
350V
R24
0.77
P8 100
S2
P7 100
P6 100
P5 100
A
0-1
SEK. 2
4.
10.
5.
F2
200mA T
R3
220
R30
6.8
D15
MR 501
D16
MR 501
BYX10
D90
S2
C6 4700uF/16V
R36
40K
R31
160K
MC
7805C
C90
4.7uF/450V
R32 460K
V-MET.
100/500V
C190 100uF/16V
A.
D17
1S921
D190 MR 501
R17
100K
R18
100K
R38
5 V
R35
1.5 M
IC1
2
7
6
3
4
SN 741
R4
R23
6.8M
R19
100K
D7
1S921
F1 1A T
S1
T 203
0
RELAY
110
7
6
SEK.1
8
4
10
SEK. 2
5
3
11
SEK. 3
9
220V
1
240V
2

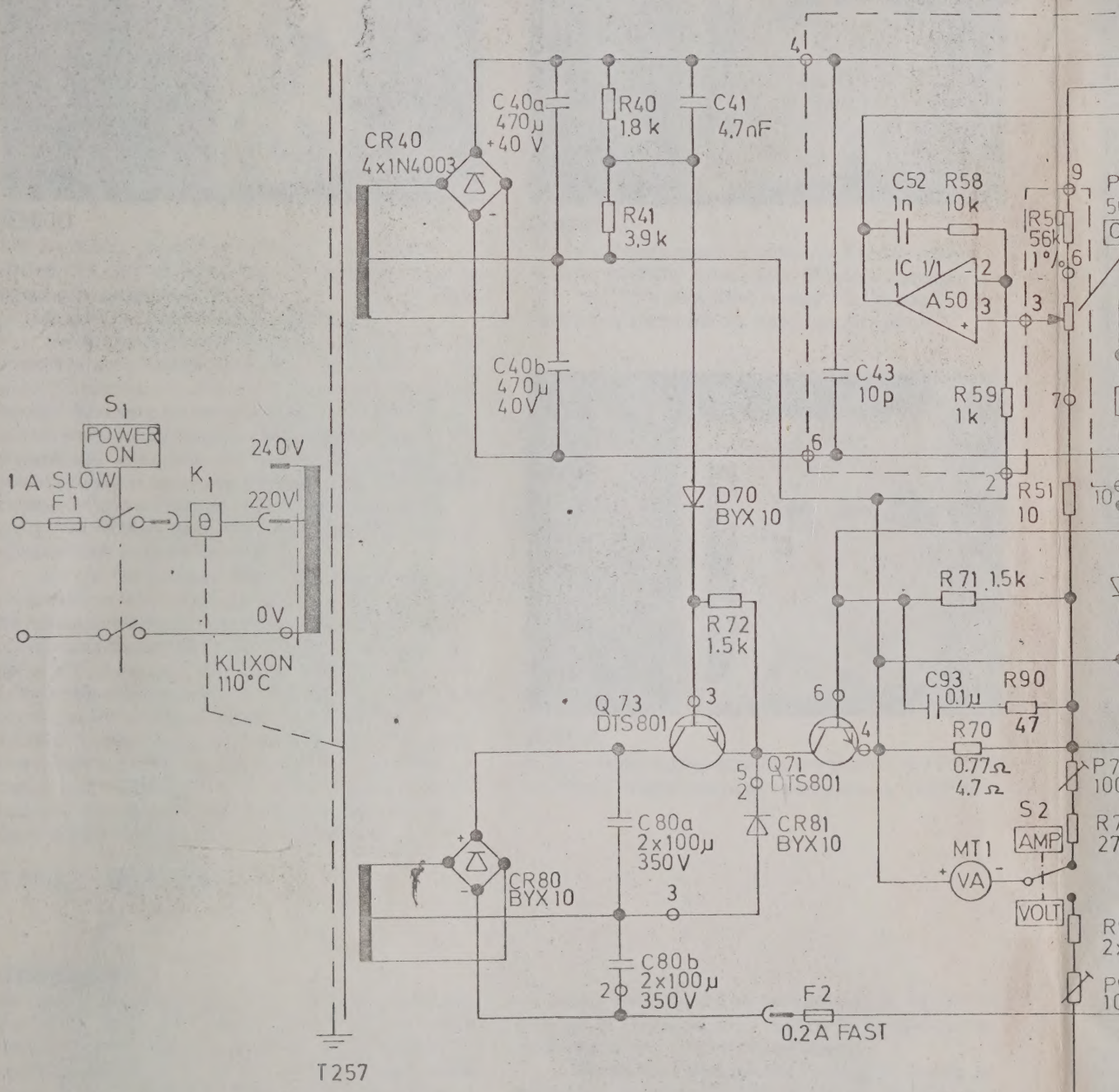


MODEL	MATERIAL	FINISH	
OLTRONIX	CIRCUIT DIAGRAM B 505 350V 100mA	PART NO.	SCALE
		DR	APPD
		245 — 73 — 1D	REV


r.-gr.
r.
C201
220 uF/
350V
D10
D11
4 x
BYX 10
D12
D13
T 201
DTS 801
R40
6,8K
D1
BYX10
R29
1K
r.-g.
R201
220
SEK.1
7.
6.
8.
D14
BYX 10
r.-g.
9.
SEK. 11.
3
C4
3.
T 202
DTS 801
r.-b.
C202
220uF/
350V
R3
220
R 24
0.77
P7
100
P8 100
S2
r.-gr.
SEK. 2
r.-b.
P6 100
R 30
6.8
P5
100
A-MET.
0-150mA
r.-b.
10.
5.
D15
MR501
D16
MR501
F2
200mA
T
b.
r.-gr.
b.
D90
BYX10
C6
4700uF/16V
r.
R36
40K
D18
1S921
MC
7805C
C90
C190
100 uF/16 V
4.7uF/
450V
V-MET.
100/500 V
D17
1S921
T4
BC178
D190
MR501
R17
100K
R18
100 K
b.
r.
R38 22K
R11
R35
1.5M
2
IC 1
7
6
4
3
D101
2xL
R4
390
gr.-b.
SN
741
R23
6.8M
R19
100 K
D
- 5 V +
T 203
F1 1A T
S1
D7
1S921
RELAY
110°
7
6
SEK. 1
8
4
10
SEK. 2
5
MF-RE
220V
1
3
11
SEK.3
240V
2
9

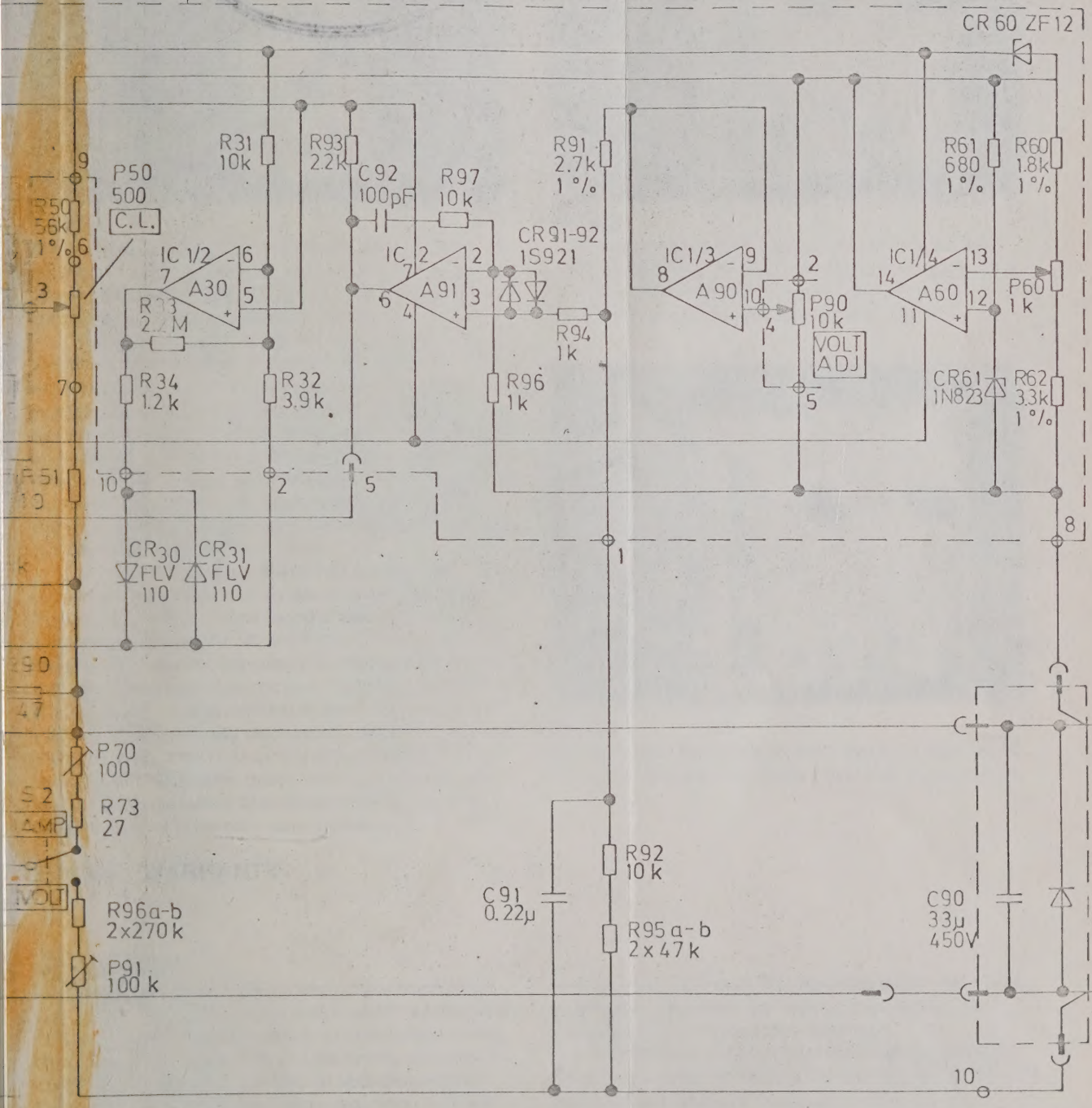


MODEL	MATERIAL	FINISH	
OLTRONIX	CIRCUIT DIAGRAM B 505 350V 100mA	PART NO.	SCALE
		DR	APPD
		245 — 73 — 1D/1	REV


S1
POWER ON
1 A SLOW
F1
K1
240 V
220V
0V
KLIXON 110°C
T257
CR40
4x1N4003
C40a 470µ +40 V
C40b 470µ 40V
R40 1.8 k
R41 3,9 k
C41 4,7nF
C43 10p
C52 1n
R58 10k
IC 1/1
A50
R50 56k 1%
R59 1k
R51 10
D70 BYX 10
R71 1.5k
R72 1.5k
Q73 DTS801
Q71 DTS801
C93 0.1µ
R90 47
R70 0.77Ω 4.7Ω
S2
AMP
VOLT
MT1
VA
C80a 2x100µ 350V
C80b 2x100µ 350V
CR80 BYX10
CR81 BYX10
F2
0.2A FAST

QUAD AMPLIFIER
MC 3403
A 60 A 30
A 50 A 90

SINGLE
741
A 91



MODEL LABPAC 500	MATERIAL	FINISH
OLTRONIX	B 505 D 0-350V 0.1A	PART NO. / SCALE DR 1976-01-20 BF / APPD 265 – 73 – 4 / REV

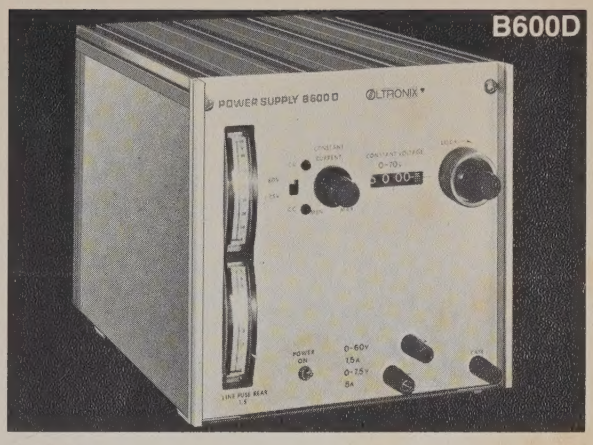
BAC PUBLICATION
OUL 252

B300D

With the B300D, Oltronix has introduced the concept of "POWER BOOST" in regulated power supply technology. In so doing the benefit to the operator in application, economy and capability has been considerably increased.

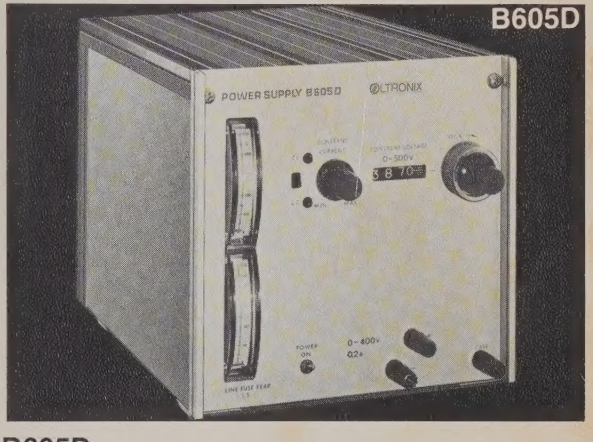
Almost everyone has at some time overloaded batteries or rectifiers without danger or damage. The conditions under which this occurs are that the period of overheating is of short duration, minimising the risk of damage by overheating, and that the power supply is able to deliver additional current. All presently available power supplies only offer a current limitation, at a safe level, for an indefinite period. There will perhaps be other limitations, however, such as the margins in the ability of the rectifiers, series regulators or amplifiers to deliver currents much above the rated value.

Oltronix has created in the B300D, an extremely useful combination of features which is able to provide nearly twice the normal current for a short period of time. The current in parenthesis represent the "POWER BOOST" available for a period of 2 – 5 minutes, depending on other parameters such as the ambient temperature and load. The three combinations of voltages and currents provided by the B300D are 40 V at 1.25 A (2 A), automatically electronically switched at approximately 20 V to 1.5 A (2.5 A) and 6 V at 3 A (5 A) effected by a manual switch. Should the circuits reach a certain temperature, an automatic current limit comes into effect which reduces the current to the continuously rated value.



B600D

The B600D represents an approximate doubling in output power of the B300D but has some different voltage combinations. The "POWER BOOST" feature is incorporated in the B600D and, like the B601D, there is an OVP at 7 V.



B605D

B605D provides the highest voltage range of 0 – 400 V at 200 mA. Higher voltages may be achieved at a lower current level.

5 YEAR WARRANTY

GENERALLY

All transformers have built-in over temperature protection (OTP). This is a bi-metal switch which disconnects the line voltage if for any reason an over temperature condition should occur. The circuits include superstable Zener references and a number of operational amplifiers providing considerably better regulation than the regulator IC:s currently available. It is a well-known fact that the data of these IC:s often suffer due to the location of reference amplifiers and power transistors on the same chip.

All outputs are protected against short circuits and have diode protection against reverse currents. The current limit range is nominally 2 – 105% of the maximum current. Should it be necessary to set the current to a higher resolution, the 1-turn potentiometer can be exchanged for a 10-turn potentiometer.

Meters are switchable for the reading of voltage or current, except for B600D, B601D and B605D which have separate voltmeters and ammeters.

Constant current or constant voltage mode is indicated by LED:s. Most models are available with the option of a European standard line connector including RFI-filter and detachable line cord.

Maximum ambient temperature is +40°C.

THE LABPAC-series

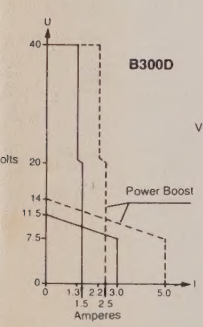
RATING DATA

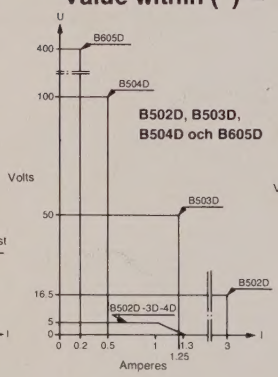
(tentative)

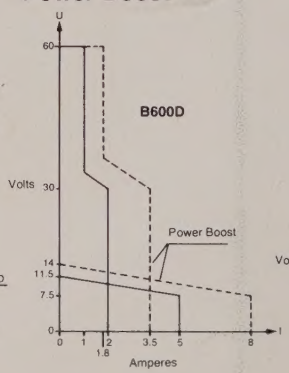
Model	Output		Stability		Noise	Dimension 1 u = 44 mm		
	V	A	0–100% Load (mV)	± 10% Mains (mV)	Vp–p (mV)	W	H	D
B300D	0-7.5	3.0(5.0)	5	1 or 0.01%	0.6	2u	4u	260 mm
	or							
	0-20	1.5(2.5)						
	20-40	1.3(2.2)						
B502D	5	1.0	*					
	0-16.5	3.0						
B503D	5	1.0	* 15		0.5			
	0-50	1.25						
B504D	5	1.0	*					
	0-100	0.5						
B600D	0-7.5	5.0(8.0)	10			4u		
	or							
	0-30	2.0(3.5)	3		0.6			
	or							
	30-60	1.0(1.8)						
B601D	0-6	10.0	5		1.4			
B602D	0-30	1.4	15		1.0			
	0-60	0.7						
B603D	0-6	3.0						
	0-30	1.4						
	0-60	0.7						
B605D	0-400	0.2			10			

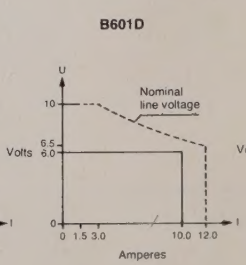
*100mV

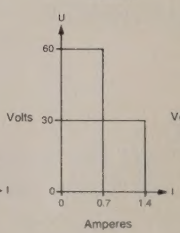
Input voltage; 220, 240 v, 50-60Hz
Recovery time; 0-100% last; <50µs
Temperature coefficient; 100 ppm/°C
Value within ( ) = "Power Boost"

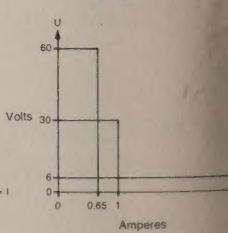












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MP MASTER
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